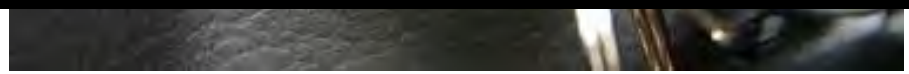
Module 2.2

Basic Control and Vehicle Balance

Keys to Your Success

Starting



Steering
Holding the Wheel

Student Activity One

1968 Chevrolet Camaro SS

4-6 complete revolutions to turn the steering wheel from locked to locked position

2001 Ford Taurus

Only 2 ½ revolutions to turn the steering wheel from locked left to locked right positions

This changes the way we turn the steering wheel

Steering
Push-Pull/Hand to Hand

Steering
Push-Pull/Hand to Hand

Student Activity Two

Push Pull Steering Activity

Steering
Hand-over-hand

Braking

Braking

- Cover
- Controlled
- Trail
- Threshold
- ABS

Braking

- PEP Activity

Brake

Accelerator

Shifting Into Gear

Accelerating

Accelerating

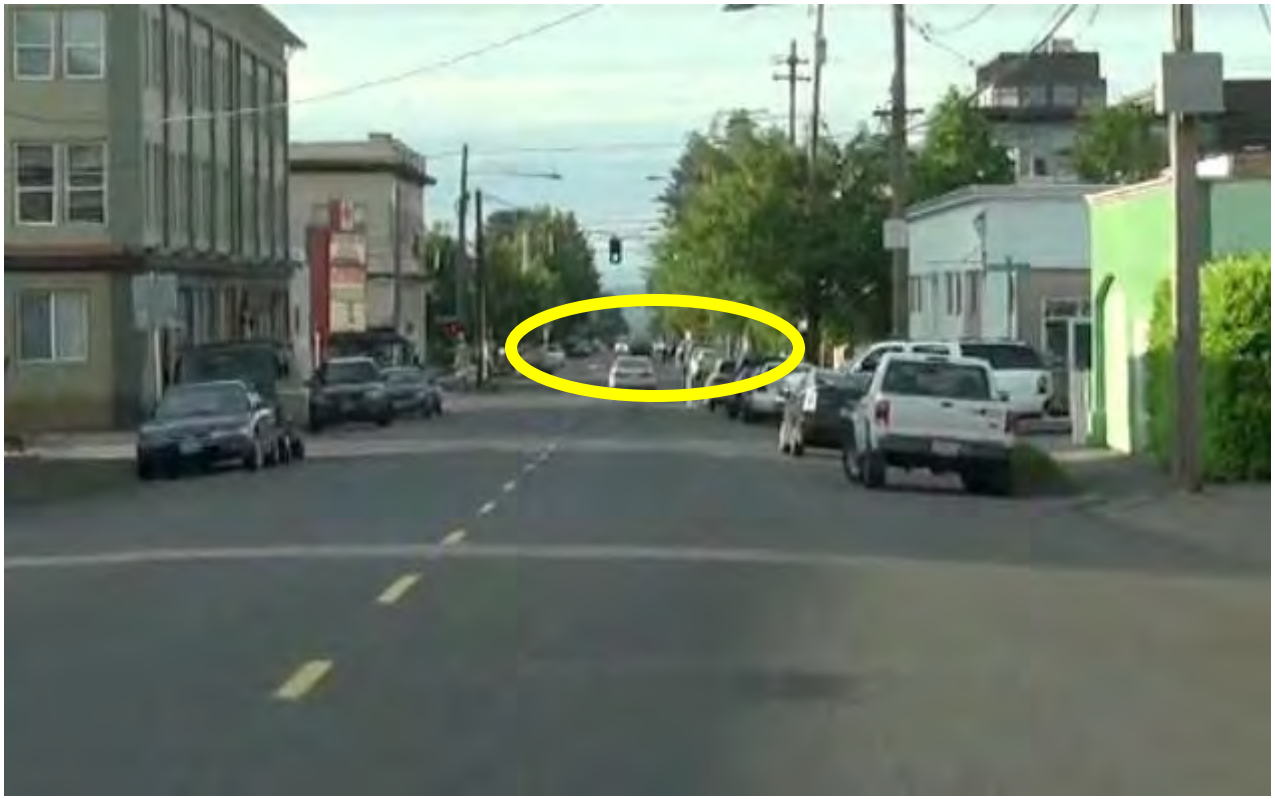
- Cover (idle speed)
- Light acceleration
- Progressive acceleration
- Thrusting acceleration

A Target is…

. . . a fixed object in the center of the path you intend to drive

The Target Area. . .

. . . is the space to the left and right of your target



The Targeting Path. . .

. . . is the path the car will travel. It is the space you will be driving into to reach your target

Three concepts for developing effective seeing habits are:

Vehicle Balance

- Best balance when vehicle is not moving
- Movement creates changes to vehicle balance
- Vehicle balance can be mismanaged

Best balance is when the vehicle is not moving.

Notice that its weight is evenly distributed on four tires.

Vehicle Balance

- Movement, starting, stopping, and turning creates change in vehicle balance

Vehicle Balance Technical Terms

- Pitch
- Roll
- Yaw

Student Activity Three

- Everybody stand up
- Pretend you are in a car moving at 55 mph
- Show what happens to your body when
  - the driver slams on the brakes.
  - the driver makes a sharp right turn.
  - the driver makes a sharp left turn.

Student Activity Three

- Pretend you are in a car at a stop sign
- Show what happens to your body when
  - the driver stomps on the accelerator.
  - the driver stomps on the accelerator makes a sharp right turn.

Student Activity Three

- Pretend you are in a car at a stop sign on a snowy day
- Show what happens to your body when
  - the driver stomps on the accelerator and turns sharply to the right.

Vehicle Balance Technical Terms

Pitch – **Vehicle weight is transferred to the rear tires when accelerating.**

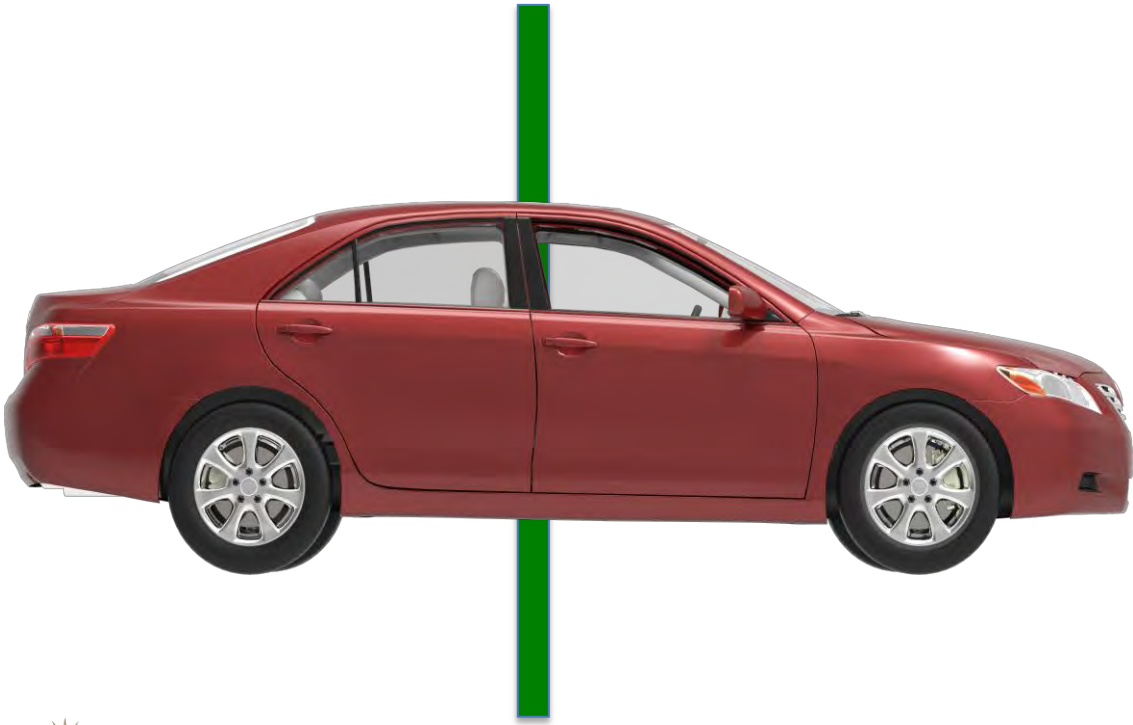
Vehicle Balance Technical Terms

Roll - **Vehicle weight is transferred to the side tires when turning or cornering.**

Right Turn causes the energy to move to the side of the car

Vehicle Balance Technical Terms

Yaw – Traction to tires is lost causing vehicle to spin around its center of gravity or "Yaw" axis.



What happens when you brake hard and steer to the right at the same time?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This diagram shows the tire pattern of the car in the previous slide.

What happens to the vehicle balance as the driver gets closer to the end of the course?

Montana Driver Education and Training
Standards and Benchmarks

1. **Laws and Highway System**
   - 1.1. know the laws outlined in the Montana Driver's manual;
   - 1.2. understand the laws outlined in the Montana Driver's Manual; and
   - 1.3. consistently demonstrate knowledge and understanding by responsible adherence to highway transportation system traffic laws and control devices.
2. **Responsibility**
   - 2.1. recognize the importance of making safe and responsible decisions for owning and operating a motor vehicle;
   - 2.2 demonstrate the ability to make appropriate decisions while operating a motor vehicle;
   - 2.3. consistently display respect for other users of the highway transportation system; and
   - 2.4. develop positive habits and attitudes for responsible driving.
3. **Visual Skills**
   - 3.1. know proper visual skills for operating a motor vehicle;
   - 3.2. communicate and explain proper visual skills for operating a motor vehicle;
   - 3.3. demonstrate the use of proper visual skills for operating a motor vehicle; and
   - 3.4. develop habits and attitudes with regard to proper visual skills.
4. **Vehicle Control**
   - 4.1. demonstrate smooth, safe and efficient operation of a motor vehicle; and
   - 4.2. develop positive habits and attitudes relative to safe, efficient and smooth vehicle operation.

(continued on next slide)

Montana Driver Education and Training
Standards and Benchmarks

5. Communication

5.1. consistently communicate driving intentions (i.e., use of lights, vehicle position, and personal signals);

5.2. adjust driver behavior based on observation of the highway transportation system and other roadway users;

5.3. adjust communication (i.e., use of lights, vehicle position, and personal signals) based on observation of the highway transportation system and other users; and

5.4. develop positive habits and attitudes for effective communication.

6. Risk Management

6.1. understand driver risk-management principles;

6.2. demonstrate driver risk-management strategies; and

6.3. develop positive habits and attitudes for effective driver risk-management.

7. Lifelong Learning

7.1. identify and use a range of learning strategies required to acquire or retain knowledge, positive driving habits, and driving skills for lifelong learning;

7.2. establish learning goals that are based on an understanding of one's own current and future learning needs; and

7.3. demonstrate knowledge and ability to make informed decisions required for positive driving habits, effective performance, and adaptation to change.

8. Driving Experience

8.1. acquire at least the minimum number of BTW hours over at least the minimum number of days, as required by law, with a Montana-approved driver education teacher; and

8.2. acquire additional behind-the-wheel driving experience with a parent or guardian's assistance in a variety of driving situations (i.e., night, adverse weather, gravel road, etc.).